California Department of Water Resources
Division of Statewide Integrated Water Management
Water Use and Efficiency Branch

OVERVIEW OF DRAFT PROVISIONAL 4TH METHOD FOR CALCULATING URBAN
WATER USE TARGETS

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The Department of Water Resources (DWR) is releasing to the Urban Stakeholder Committee a Draft Provisional 4th Method for Calculating Urban Water Use Targets. This method builds on earlier proposed 4th method alternatives combining the indoor residential, CII and metering savings estimates from the BMP Calculator alternative with the landscape and water loss savings calculations from the DWR II alternative.

Provisional 4th Method

SBx7-7 directs DWR to update the 4th target method by 2015. DWR has added the term "provisional" to the title of the method as the department expects to make improvements to the method in advance of the 2015 urban water management plans. Possible improvements include changes to the landscape area and water loss savings calculations and adjustments to baselines based on 2010 urban water management plan data.

Expanded Random Sample Agency List

DWR has expanded the random sample list from 31 agencies to 51 agencies to provide a more representative sample. All the calculations for the sample agencies were run with the year 2000 as the midpoint of the baseline period instead of 2005. The base daily per capita was calculated based on year 2000 data rather than a 10-year average. DWR recognizes that a 10-year average baseline would provide a more accurate baseline, but data and time limitations did not make this possible. DWR anticipates updating the method by 2015 using the actual baselines that the agencies submit in their 2010 urban water management plans. Two of the agencies that were in the previous list of sample agencies have been removed due to problems in obtaining accurate estimates of their populations.

Draft Provisional 4th Method Worksheets

DWR has developed several worksheets that have the method's basic equations and provide an example calculation. The equations are color coded to help users match the equations' components with the columns in the spreadsheets. The numbers and the savings estimates in the spreadsheet and the equations are expressed as gallons per capita per day (gpcd). Page numbers referred to below apply to the worksheets document.

Page 1:

Equation 1: The draft provisional method calculates urban water use targets by subtracting a total savings estimate from base daily per capita water use.

Equation 2: Total savings is is the sum of savings fromfour water use sectors: indoor residential, metering, CII, and a combined landscape and water loss term. More detail is provided on page 2 on how the savings are calculated for each water use sector.

Equation 3: The landscape and water loss value is calculated by subtracting a standard indoor residential value of 70 gpcd and CII water use from base daily per capita water use. A standard value of 70 gpcd is used as DWR has not found an accurate way to estimate actual indoor residential water use. This standard value is supported by a study published by the AWWA Research Foundation. The use of the standard value also provides credit to agencies that have implemented indoor residential conservation and have average indoor residential values lower than 70 gpcd.

Page 2:

This page explains each of the savings terms in the total savings equation.

Indoor Residential (yellow): Indoor residential savings can be calculated in two ways, through use of a BMP calculator or through the use of a default indoor residential savings value.

    BMP Calculator- The indoor residential savings is the sumof four savings estimates from the calculator: single family toilets, multi family toilets, residential washers and showerheads. The calculator uses a variety of data to estimate the saturation level for the four fixtures of various efficiencies. The saturation estimates are based on the midpoint year of the supplier's baseline. The calculations in the spreadsheet are based on the year 2000. The calculator estimates how much water would be saved if the saturation for efficient fixtures was increased to reach saturation goals for 2020. Suppliers that have high percentages of efficient fixtures will have to install fewer efficient fixtures to reach the saturation goal and will have smaller savings requirements.

    Default Option- DWR has provided a default option for water suppliers that don't have the data or would like to get a rough estimate of their urban water use target under method 4. DWR determined the default value by 1) using the BMP calculator to calculate indoor residential savings for all suppliers in the random sample, 2) calculating the random sample average of indoor residential savings using the BMP calculator (14.1 gpcd), and 3) calculating the average of indoor residential savings for all suppliers in the random sample with a savings higher than 14.1 gpcd (resulting in 15.1 gpcd),

Meter Savings (green): Metering savings are based on California Urban Water Conservation Council's (CUWCC) estimate of savings in its Memorandum of Understanding (MOU). The

metering BMP is 1.3, which estimates that 20% of the water delivered to unmetered connections can be saved through metering.

CII Savings (blue): CII savings are 10% of baseline CII water use. This standard comes from Target Method 2 specified in SBX7-7.

Landscape Water Use and Water Loss Savings (purple): Landscape water use and water loss savings are 21.6% of the baseline landscape water use and water loss term. . The landscape and water loss savings percentage has been determined so that the average of the total savings of the four savings terms from all the random sample agencies was 20% of the random sample average baseline.

Page 3:

Example: Sacramento Suburban Water District

In the example, where possible, the cells and the headers have been taken directly from the spreadsheet to help make the connection between the equations and the spreadsheet. Equations 4 and 5 are not in the spreadsheet but are provided to show the complete calculations.